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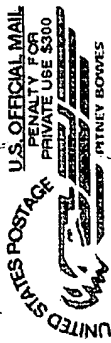
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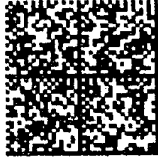
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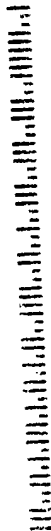


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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/809,066

03/15/2004

Medhat Mickael

AES 04-001

6976

7590

05/22/2006

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EXAMINER

BOOSALIS, FANI POLYZOS

ART UNIT

PAPER NUMBER

2884

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

W

Office Action Summary	Application No.	Applicant(s)	
	10/809,066	MICKAEL, MEDHAT	
	Examiner	Art Unit	
	Faye Boosalis	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20, 40-44 and 49-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-39, 45-48 and 53-56 is/are allowed.
- 6) ☒ Claim(s) 1-20, 41-44 and 49-52 is/are rejected.
- 7) ☒ Claim(s) 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Comment on Submissions

1. This communication is responsive to submission of 3 March 2006.

Claim Objections

2. Claim 40 is objected to because of the following informalities: Claim 40 is missing a dependency. Although a telephone interview with Patrick McCollum on May 12, 2006 authorized the amendment to claim 40 to depend on claim 37, an Examiner's amendment cannot be made based on the 112 and 101 Claim Rejections. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-20, 41-44 and 49-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-20, 41-44 and 49-52 are indefinite for failing to disclose a system for gamma ray logging-while-drilling or a method of gain adjustment for logging-while-drilling in a single claim. See MPEP, II. PRODUCT AND PROCESS IN THE SAME CLAIM, In Ex parte Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990).

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-20, 41-44 and 49-52 are rejected under 35 U.S.C. 101 because each single claim claims both a system and a method step of using the system. Claims 1-20, 41-44 and 49-52 are indefinite for failing to disclose system or a method in a single claim. Claims 1-20, 41-44 and 49-52 are directed to neither a process nor a system, but rather embraces or overlaps two different statutory classes of invention.

Allowable Subject Matter

7. Claims 21-39, 45-48 and 53-56 are allowed.

8. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 21, the prior art does not disclose or fairly suggest method for measuring gamma radiation while drilling a borehole comprising an adjustment of gain of the detector by using a measure of slope of a Compton scatter energy region.

The examiner notes that while it is known in the art for a logging-while-drilling method to measure formation density obtained from a measure of intensity of backscattered radiation in the Compton energy range (see for example *Paske et al.* - *US 4,698,501*— at col. 1, lines 7-17 and col. 3, lines 38-41), upon reconsideration the prior art does not suggest an adjustment of gain of the detector by using a measure of slope of a Compton scatter region to determine a correction factor to adjust detector gain to a standard gain.

Regarding independent claim 33, the prior art does not disclose or fairly suggest a method for measuring gamma radiation while drilling a borehole comprising result of

the comparisons between observed position of a calibration peak from the calibration radiation and with a predetermined standard position for the calibration peak, are used to correct standard gain spectrum to a standard detector gain.

The examiner notes that while it is known in the art for a logging-while-drilling system comprising measuring concentrations of K, U, and Th using blocks, disposed outside of the logging tool prior to logging and later removed during logging, containing known concentrations of these materials and a gain correction circuit to adjust the gain of measured natural gamma ray spectra based upon results of fitting of measured spectra to a standard spectra (see for example *Galford et al. - US 5,120,955 A*— at col. 9, lines 47-50 and col. 10, lines 13-16), upon reconsideration the prior art does not suggest a means for using dual gain circuit to yield the same measured gamma ray spectra with a standard gain and a high gain.

Regarding independent claim 45, the prior art does not disclose or fairly suggest a method for measuring elemental concentration of at least one naturally occurring radioactive element in a formation penetrated by a borehole, comprising: a calibration source wherein the first gain correction determined from first component features of radioactive element and second gain correction from second component from calibration source are combined to correct gain shifts in gamma ray detector.

The examiner notes that while it is known in the art for a logging-while-drilling system comprising measuring concentrations of K, U, and Th using blocks, disposed outside of the logging tool prior to logging and later removed during logging, containing known concentrations of these materials and a gain correction circuit to adjust the gain

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of measured natural gamma ray spectra based upon results of fitting of measured spectra to a standard spectra (see for example *Galford et al.* - US 5,120,955 A— at col. 9, lines 47-50 and col. 10, lines 13-16), upon reconsideration the prior art does not suggest a calibration source, as stated supra, to correct gain shifts in gamma ray detectors.

Regarding independent claim 53, the prior art does not disclose or fairly suggest a method for measuring gamma radiation while drilling a borehole, comprising: a gamma ray detector, with a processor, yield a spectrum at a range of about 3 MeV to comprise gamma ray count rate recorded as a function of energy channel.

The examiner notes that while it is known in the art of a density logging system to comprise a cesium source emitting 0.66 MeV gamma radiation and comprising two gamma ray detectors to measure Compton scatter radiation, induced by the cesium source, to determine formation bulk density (see for example *Hubner et al.* - US 4,524,273 – at col. 5, lines 60-65), upon reconsideration the prior art does not suggest a LWD gamma ray logging system embodied to measure natural occurring radioactive elements (i.e. Th, U and K) emitting energy, broader than the range stated supra by Hubner, up to about 3 MeV.

The remaining claims 22-32, 34-39, 46-48, 54-56 are allowable based on their dependency.

9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Boosalis whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FB


DAVID PORTA
SUPERVISORY PATENT EXAMINER
ELECTRONIC BUSINESS CENTER 2800